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Statistical Compilation

Questionnaire Survey of Clinical Pathways of Psychiatric Emergency in Japan: Status and Issues

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Abstract

The clinical pathway has become popular since 2014 for psychiatric emergency services in Japan. However, its utilization is still unknown. The Japanese Society for Clinical Pathway created a definition for the clinical pathway in 2014. According to this definition, a clinical pathway must include three methods: (1) setting outcomes, (2) evaluating outcomes, and (3) variance analysis. However, how prevalent these paths containing these three techniques is unclear. Thus, we conducted a questionnaire survey of hospitals with psychiatric emergency departments.

As a result of the survey, it was found that 49.3% of the hospitals had introduced the pass. However, 61.8% set outcomes, 44.1% evaluated outcomes, and 26.5% conducted a variance analysis. It became clear that pathways that meet the definition of the Japanese Society for Clinical Pathway are not sufficiently popular.

We considered that two main factors prevent a path that encompasses outcome setting, outcome evaluation, and variance analysis from becoming popular. The first factor is the issue of nurse records. The inputs of outcome setting, outcome evaluation, and variance analysis alone cannot express nurses' observations and thought processes. As a result, there is a problem that the pass cannot include the items required by the nurse. The second factor is the problem with electronic patient record software packages. As a result of the survey, 94.2% of hospitals have introduced electronic patient records. However,

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few electronic patient record software packages have functions for setting and assessing outcomes and analyzing variances.

Keywords: clinical pathway, care management, psychiatric emergency service, electrical health record, BOM

Introduction

In Japan, research on the psychiatric acute care management model was conducted from fiscal years 2008 to 2010. This research suggested that implementing care management from the early stages of hospitalization in psychiatric emergency services and on acute care wards would make it possible to prevent prolonged hospitalization. [3] However, the same research also demonstrated that acute psychiatric care management encompasses multiple time-consuming treatment processes, including patient needs assessment, the creation of unified treatment plans across disciplines, and care conferences. Consequently, the time required to complete treatment is lengthy, and many cases were observed where not all treatment processes could be completed before the end of the psychiatric emergency service period. To date, no effective solution has been found to resolve this issue of treatment speed. Any resolution to this challenge requires streamlining team-based care.

One method to enhance the efficiency of team-based care is the clinical pathway (hereafter referred to as "pathway"). Pathways not only promote team-based care and offer advantages in improving work processes and efficiency, but also share characteristics with care management in that they enable the establishment of a unified treatment plan and facilitate multi-professional collaboration to address problems. Consequently, both approaches are sometimes used in combination.[1] In recent years, the effectiveness of clinical pathways has also been reported in psychiatric emergency services, demonstrating their ability to streamline team-based care in this setting.[4] Acute psychiatric care management, considered effective in preventing prolonged hospital stays in cases of psychiatric emergencies, can be combined with clinical pathways. This combination is considered to enable completion of the treatment process within the limited hospitalization period. Therefore, clinical pathways are considered

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meaningful to introduce in psychiatric emergency services.

In Japan, the 2014 revision of medical fees established an additional fee for in-hospital standardized treatment plans. This allows medical fees to be billed when an in-hospital standard treatment plan is created for patients receiving psychiatric emergency services or in the acute phase of their hospitalization, and the patient is discharged within 60 days. This is considered the catalyst for the spread of pathways, primarily among medical institutions providing psychiatric emergency services nationwide. However, no reports on the actual status of pathways in psychiatry have been published to date, and the specific prevalence of clinical pathways in Japan's psychiatric emergency services remains unclear.

In 2014, the Japanese Society for Clinical Pathway defined a pathway as "a standardized treatment plan encompassing the patient's condition, treatment objectives, and evaluation/recording, serving as a method to improve healthcare quality by analyzing deviations from the standard." Specifically, a pathway is a healthcare management technique that improves quality by establishing "outcomes" (patients' states and treatment goals), evaluating whether these outcomes were achieved after treatment, and if not achieved, identifying deviations from the standard through "variance analysis." Based on this analysis, the treatment plan is revised, and the cycle is repeated to connect back to treatment implementation (Figure 1). If this entire process is not included, the pathway does not meet the definition of a clinical pathway. However, no reports have been identified to date investigating which pathways used in psychiatric emergency services possess a structure meeting this definition and are being implemented.

In Japan, since 2018, the Japan Society for Medical Informatics and Japanese Society for Clinical Pathway have jointly implemented a project called: "Development and Utilization of a Standard Data Model for Clinical Pathways (ePath Project)." This initiative integrates and analyzes pathway data from multiple medical institutions.[7] However, integrating and analyzing data from multiple institutions requires a prerequisite: the terminology for outcomes used in pathways and observation items used to evaluate those outcomes must be standardized across healthcare facilities. Against this backdrop, in recent years, the term "Basic Outcome Master (BOM)," created by the Japanese Society for Clinical Pathway, has become increasingly used among domestic institutions implementing

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pathways.[6] However, no reports have been identified to date investigating the extent to which psychiatric emergency service facilities use BOM as their pathway terminology.

Traditionally, pathways were primarily paper-based. In Japan, attempts to digitize them began around 2000, and currently, many vendors include a clinical pathway system (hereinafter referred to as a pathway system) as a standard feature of their electronic health records systems. However, the functions, screen layouts, and operating methods of each pathway system vary depending on the electronic health records. Some systems lack pathway functionality, and some software cannot perform outcome evaluations or variance analyses. No reports have been identified to date evaluating the electronic pathway adoption rate among medical institutions providing psychiatric emergency services, or the functionality of the pathway systems installed in the electronic health records adopted by each institution.

Against this backdrop, this paper reports the results of a questionnaire survey we conducted, aiming to clarify the actual state of care pathways among psychiatric emergency services in Japan.

I. Survey Methods

1. Survey subjects

The survey targeted 179 medical facilities billing for psychiatric emergency service acute care hospitalization fees and psychiatric emergency/complication hospitalization fees.

2. Survey period

November 29, 2022 to January 13, 2023.

3. Data collection method and procedure

A request letter and response form were mailed in an envelope to the target facilities under the name of the first author. The request letter stated the purpose of this survey and requested cooperation. The questions on the response form are shown in Table 1.

4. Data analysis method

Descriptive statistics were performed for each item, showing the number of respondents and percentages.

5. Ethical considerations

Respondents were informed in writing that survey information would be processed statistically and that no identifiable hospital names would be published. Approval was obtained from the Ethics Committee of Matsubara Hospital, where the authors are affiliated (Approval No.: 2022016).

II. Results

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Of the 179 medical facilities, responses were obtained from 69 (response rate: 38.5%). Regarding the hospitalization fees billed, 64 hospitals billed for the Psychiatric Emergency Service Acute Care Hospitalization Fee, while 1 facility billed only for the Psychiatric Emergency Service and Complication Hospitalization Fee. Two hospitals billed for both the Psychiatric Emergency Service Acute Care Hospitalization Fee and Psychiatric Emergency Service and Complications Hospitalization Fee, while two hospitals did not respond regarding the hospitalization fee items.

1. Pathway adoption and digitization rates

Of the 69 hospitals, 34 (49.3%) had introduced clinical pathways. Among the 34 hospitals using clinical pathways, 8 hospitals (23.5%) used paper as the medium, 23 hospitals (67.6%) utilized electronic media, and 3 hospitals (8.8%) used both paper and electronic media. The digitization rate among hospitals applying the pathways was 76.5%.

2. Electronic health record (EHR) adoption rate and EHR software

A total of 65 out of the 69 hospitals (94.2%) had implemented an EHR system. Among the 65 hospitals with electronic health records, the most common software was Resco's Alpha, used by 15 hospitals (23.1%). This was followed by NAIS's Nozomi at 9 hospitals (13.8%), and LiveWorks' Live and JBCC's Psyche, each used by 8 hospitals (12.3%). Fujitsu's HOPE and NEC's MegaOak, both widely adopted in general hospitals, were used by 3 hospitals each (4.6%) (Figure 2).

3. Clinical pathway structure and use of terminology master

Of the 34 hospitals implementing pathways, 21 (61.8%) set outcomes within their pathways, 15 (44.1%) evaluated outcomes, 9 (26.5%) performed variance analysis (Table 2), and two hospitals (5.9%) used BOM during clinical pathway creation. Additionally, 19 hospitals (55.9%) had established “observation items” indicating the necessary observations for outcome evaluation.

4. Pathway system functionality

Among the 65 hospitals using electronic health records (EHR), 39 hospitals (60.0%) reported that their implemented EHR included a pathway system. Thirty-two hospitals (49.2%) reported that their pathway system had functionality to set outcomes, 29 hospitals (44.6%) reported functionality to evaluate outcomes, and 12 hospitals (18.5%) reported functionality to perform variance analysis (Table 2).

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III. Discussion

The results of this survey revealed that nearly half of the responding hospitals had introduced clinical pathways. Furthermore, among the hospitals that reported introducing clinical pathways, 61.8% had performed outcome setting, representing a majority. However, only 44.1% conducted outcome evaluation, and only 26.5% of hospitals performed variance analysis. This indicates that most clinical pathways do not meet the definition of a pathway. The following points are considered as factors contributing to the lack of widespread adoption of clinical pathways, which include outcome setting and evaluation, as well as variance analysis.

1. Issues with nursing records

Nursing records document the sequence of work performed by nurses, comprising five processes: “Observation and Assessment,” “Clarification of Support Content,” “Planning,” “Implementation,” and “Evaluation.” Traditionally, nurses have documented these five nursing work processes by creating and recording: “Basic Information (Database),” “Nursing Plan,” “Progress Notes,” and “Nursing Summary.” In 2018, the Japan Nursing Association stated in its guidelines on nursing documentation that “clinical pathways include standard plans and progress notes as nursing documentation.”[5] This allowed the traditional tasks of creating “Nursing Plans” and “Progress Notes” to be replaced by setting outcomes, defining “Observation Items” to evaluate outcomes, establishing and recording the implementation of items called “Tasks” that describe the work content, and recording evaluations of outcome achievement or non-achievement. This significantly changed nurses' documentation methods and improved the efficiency of nursing work.

However, among the five nursing work processes requiring documentation, “Observation and Assessment” and “Clarification of Support Content” are considered nursing processes difficult to document using pathways. These two processes refer to the steps where nurses identify individual patient problems through patient engagement, consider appropriate support based on these findings, and develop a nursing plan. To concretely demonstrate this nursing thought process, written documentation is considered appropriate in records. It is difficult to express this solely through the simple evaluation records used in pathway documentation, such as (+) or (-) for observation items, or “achieved” or “not achieved” for outcome evaluations. Thus, even with the introduction of pathways, nursing

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records cannot be completed solely with the input of observation items or outcome assessments. Without combining them with written documentation, it is difficult to record the entire necessary nursing process.

Furthermore, nursing records based on pathways also present issues regarding individuality. Among the nursing problems patients face, many are specific to individual patients and involve multiple diseases, such as risk of falls, risk of pressure ulcers, feeding problems, physical complications, and issues with the level of independence in daily living for the elderly. Such highly individualized nursing issues are not predefined within the outcomes of disease-specific pathways like the “Schizophrenia Pathway” or “Depression Pathway.” Therefore, when documenting the nursing process, it is necessary to develop a nursing plan separate from the pathway and record the content of the entire nursing practice. Particularly for patients receiving psychiatric emergency services, highly individualized nursing issues, such as rapport problems, self-care issues, support system concerns, and money management difficulties, are frequently present.

Thus, the introduction of pathways presents multiple challenges for nursing documentation. Attempting to implement pathways alongside nursing practice in hospitals could significantly disrupt the activities of nurses accustomed to traditional documentation methods over many years. Therefore, when introducing pathways in a hospital, substantial time must be allocated to establish and disseminate internal rules for nursing documentation. While pathways have demonstrated the potential to help streamline nursing tasks in psychiatric emergency services[4] and thus hold merit for implementation, these challenges in nursing work represent one hurdle to the widespread adoption of pathways that include outcome input and variance analysis.[4]

2. Electronic health record (EHR) functionality

This survey revealed that most medical institutions offering psychiatric emergency services had implemented the use of electronic health records; however, the records implemented tended to be specialized “psychiatric hospital electronic health records systems” tailored to psychiatric workflows, rather than electronic health records software commonly used in other medical departments, such as those provided by Fujitsu or NEC. Furthermore, among the medical institutions that have introduced pathways, the rate of pathway digitization was high, at 76.5%,

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indicating that pathway digitization is actively pursued within psychiatric emergency services.

However, regarding the functionality of electronic pathway systems in the electronic health records adopted by the hospitals surveyed, the responses indicated that software with outcome evaluation functions was present in only 44.6% of cases, and software with variance analysis functions was present in only 18.5%. These figures are based on responses from the hospitals and do not represent a direct evaluation by us of the actual functionality of the electronic health records software in use; therefore, they may not accurately reflect the capabilities of each software package. Nevertheless, it was considered that functional limitations of electronic health records software could potentially be one barrier to introducing pathways that include outcome evaluation and variance analysis input, necessitating further investigation.

3. Terminology master issues

This survey revealed that BOMs are not widely adopted in psychiatric emergency services. A previous survey conducted by the Japanese Society for Clinical Pathway targeting all medical departments indicated that 41.6% of hospitals had introduced BOMs.[6] Compared with this result, it is inferred that the rate of utilizing BOMs in psychiatric emergency services is lower than in other medical departments.

Previously, we investigated challenges arising from using BOM in psychiatric pathways. Our findings indicated that BOM contains few outcome terms specific to psychiatry, making it difficult to use BOM as a terminology master during pathway development in psychiatry.[4] In other medical fields, using BOM during pathway creation is feasible, eliminating the need to consider outcome terms during development. Conversely, when attempting to create pathways in psychiatry, the limited number of included terms makes BOM-based pathway creation difficult, necessitating the process of developing outcome terminology from the very beginning for hospital use.

However, the BOM version upgraded in 2022 includes more psychiatric terminology. Efforts to incorporate even more psychiatric terms for the next version upgrade have begun, led by the Japanese Society for Clinical Pathway. It is anticipated that BOM will continue to evolve into a more suitable tool to support the creation of psychiatric pathways.

Finally, we note the limitations of this survey. While responses were obtained from 69 of the 179 hospitals surveyed, it was difficult to ascertain the pathway-adoption status at the remaining 110

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hospitals. Therefore, the results of this survey do not represent the entire field of psychiatric emergency services. Furthermore, the information regarding the functions of electronic health records systems sold by various vendors is based on hospital questionnaires. To accurately evaluate the capabilities of each type of software, a separate survey targeting the vendors themselves would be necessary.

Conclusion

This survey clarified the actual state of pathway introduction in psychiatric emergency services. Among the hospitals that responded to the questionnaire, few had conducted variance analysis, indicating that pathways are not being appropriately utilized. To use pathways in psychiatric emergency services in combination with care management to prevent long-term hospitalization, their operation must be improved. This requires addressing various challenges, such as issues with nursing records and the use of electronic health record (EHR) software.

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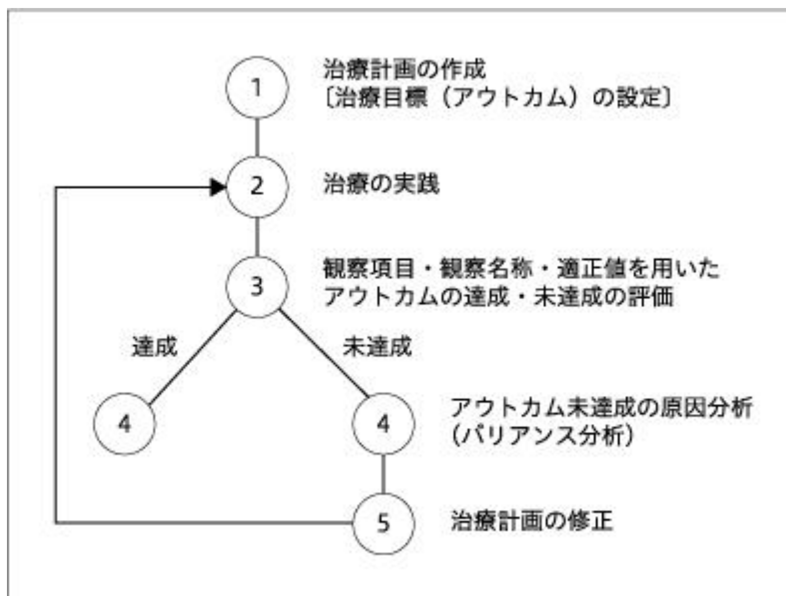

図 1　定義を満たすために必要なパスの構造

Figure 1: Pathway structure required to meet definitions

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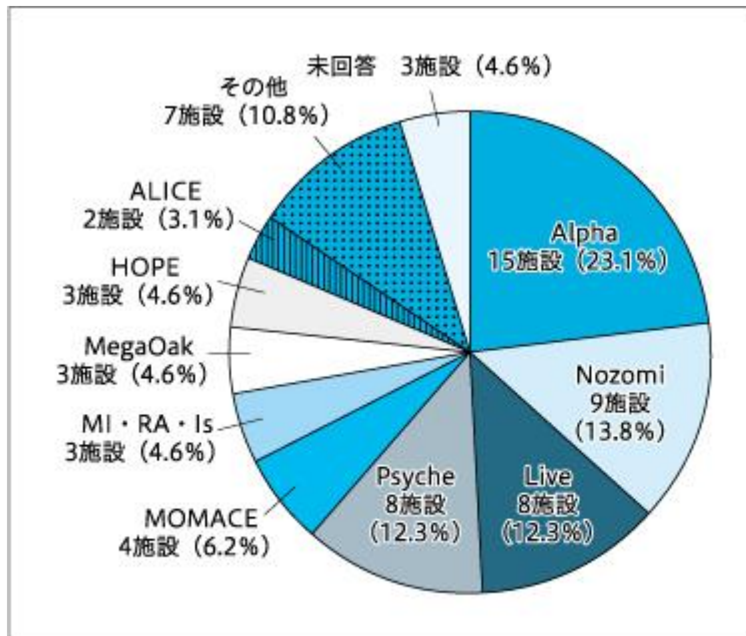

図2　電子カルテソフトウェア別の導入状況

データラベルは電子カルテソフトウェア名，施設数，割合を示している．

Figure 2: Implementation status by electronic health record software

Data labels indicate the electronic health record software name, number of hospitals, and percentage.

表1　質問項目

1. 全病床数
2. 算定している入院基本料の種類
3. 精神科救急病床数
4. 電子カルテ導入の有無
5. 電子カルテのソフトウェア名
6. パス導入の有無
7. パスの媒体（紙パスか電子パスか）
8. パス構造（アウトカム，観察項目，観察名称，適正値設定の有無）
9. アウトカム評価の実施の有無
10. バリアンス分析の実施の有無
11. 用語マスター（ベーシックアウトカムマスター）使用の有無
12. 導入している電子カルテが搭載しているパスシステムの機能
13. パスの導入や運用に際して困っていること（自由記載）
14. パスの勉強会，ワークショップが開催された場合の参加希望

Table 1: Survey questions

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1. Total number of beds
2. Type of basic hospitalization fee billed
3. Number of psychiatric emergency service beds
4. Presence of electronic health records (EHR) system
5. Name of EHR software
6. Presence of clinical pathway system
7. Pathway medium (paper or electronic)
8. Pathway structure (outcomes, observation items, observation names, presence of target value setting)
9. Implementation of outcome assessment
10. Implementation of variance analysis
11. Use of terminology master (basic outcome master)
12. Functions of pathway system incorporated in the implemented EHR
13. Challenges encountered during pathway introduction or operation (free text)
14. Interest in attending pathway study sessions or workshops if offered

表 2　パス導入病院が使用しているパスの構造とパスシステムの機能

		有 施設数（%）	無 施設数（%）	未回答 施設数（%）
パス導入施設 （N＝34）	アウトカムの設定	21（61.8）	13（38.2）	0（0）
	アウトカム評価の実施	15（44.1）	19（55.9）	0（0）
	バリアンス分析の実施	9（26.5）	25（73.5）	0（0）
電子カルテ導入施設 （N＝65） （パス導入有無は問わない）	パスシステムの搭載	39（60.0）	22（33.8）	4（6.2）
	アウトカム設定機能	32（49.2）	24（36.9）	9（13.8）
	アウトカム評価機能	29（44.6）	27（41.5）	9（13.8）
	バリアンス分析機能	12（18.5）	42（64.6）	11（16.9）

Table 2: Structure and functions of clinical pathway systems used in hospitals that have introduced them

Yes　Number of hospitals (%)

No　Number of hospitals (%)

No response　Number of hospitals (%)

Hospitals that have introduced a clinical pathway (N=34)

Outcome setting	21 (61.8)	13 (38.2)	0 (0)
Outcome evaluation performed	15 (44.1)	19 (55.9)	0 (0)

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Variance analysis conducted	9 (26.5)	25 (73.5)	0 (0)
Hospitals that have introduced electronic health records (N=65) (Regardless of clinical pathway introduction)			
Clinical pathway system available	39 (60.0)	22 (33.8)	4 (6.2)
Outcome setting function	32 (49.2)	24 (36.9)	9 (13.8)
Outcome evaluation function	29 (44.6)	27 (41.5)	9 (13.8)
Variance analysis function	12 (18.5)	42 (64.6)	11 (16.9)

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